

<b>Form PTO-1449</b>  <div style="border: 1px solid black; border-radius: 50%; padding: 10px; width: 100px; text-align: center;"> <b>O I P E</b>  <b>SEP 08 2000</b>  <b>PATENT &amp; TRADEMARK OFFICE</b> </div>	<b>U.S. Department of Commerce</b> <b>Patent and Trademark Office</b>	<b>Atty. Docket No.</b> 57906-B/JPW/SHS/GJC	<b>Serial No.</b> 09/594,983
<b>INFORMATION DISCLOSURE CITATION</b> (Use several sheets if necessary)		<b>Applicants</b> William C. Olson, et al.	
		<b>Filing Date</b> June 15, 2000	<b>Group</b>

**U.S. PATENT DOCUMENTS**

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**FOREIGN PATENT DOCUMENTS**

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						Yes	No

**OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)**

SHE	A	Allaway, G.P., K.L. Davis-Bruno, B.A. Beaudry, E.B. Garcia, E.L. Wong, A.M. Ryder, K.W. Hasel, M.C. Gaudin, R.A. Koup, J.S. McDougal and P.J. Maddon. 1995 Expression and characterization of CD4-IgG2, a novel heterotetramer that neutralizes primary HIV type 1 isolates. AIDS Res Hum Retroviruses 11:533-539;
	B	Allaway, G.P., A.M. Ryder, G.A. Beaudry and P.J. Maddon 1993. Synergistic inhibition of HIV-1 envelope-mediated cell fusion by CD4-based molecules in combination with antibodies to gp120 or gp41. AIDS Res. Hum. Retroviruses 9:581-587;
	C	Amara, A., S.L. Gall, O. Schwartz, J. Salamero, M. Montes, P. Loetscher, M. Baggiolini, J.L. Virelizier and F. Arenzana-Seisdedos. 1997. HIV coreceptor downregulation as antiviral principle: SDF-1a-dependent internalization of the chemokine receptor CXCR4 contributes to inhibition of HIV replication. J. Exp. Med. 186:139-146;
	D	Berger, E.A. 1997. HIV entry and tropism: the chemokine receptor connection. AIDS 11 (suppl A): S3-S16;
	E	Bieniasz, P.D., R.A. Fridell, I. Aramori, S.S.G. Ferguson, M.C. Caron and B.R. Cullen. 1997. HIV-1 induced cell fusion is mediated by multiple regions within both the viral envelope and the CCR5 co-receptor. EMBO 16:2599-2609;
	F	Brelot, A., N. Heveker, O. Pleskoff, N. Sol and M. Alizon. 1997. Role of the first and third extracellular domains of CXCR4 in human immunodeficiency virus coreceptor activity. J. Virol. 71:4744-4751;
	G	Chan, D.C. and P.S. Kim. 1998. HIV entry and its inhibition. Cell 93:681-684;
SHE	H	Connor, R.I. K.E. Sheridan, D. Ceradini, S. Choe and N.R. Landau. 1997. Change in co-receptor use correlates with disease progression in HIV-1 infected individuals. J. Exp. Med. 185:621-628 ;

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I	Crump, M.P., J.H. Gong, P. Loetscher, K. Rajarathnam, A. Amara, R. Arenzana-Seisdedos, J.L. Virelizier, M. Baggiolini, B.D. Sykes and I. Clark-Lewis. 1997. Solution structure and basis for functional activity of stromal-cell derived factor-1; disassociation of CXCR4 activation from binding and inhibition of HIV-1. EMBO 16:6996-7007;
J	Dalglish, A.G., P.C.L. Beverly, P.R. Clapham, D.H. Crawford, M.F. Greaves and R.A. Weiss 1984. The CD4 (T4) antigen is an essential component of the receptor for the AIDS retrovirus Nature 312:763-766;
K	Donzella, G.A., D. Schols, S.W. Lin, J.A. Este, K.A. Nagashima, P.J. Maddon, G.P. Allaway, T.P. Sakamar, G. Henson, E.D. Clercq and J.P. Moore. 1998 AMD3100, a small molecule inhibitor of HIV-1 entry via the CXCR4 co-receptor. Nat. Med. 4:72-77;
L	Doranz, B.J., K. Grovit-Ferbas, M.P. Sharron, S.H. Mao, M.B. Goetz, E.S. Daar, R.W. Doms and W.A. O'Brien. 1997. A small molecule inhibitor directed against the chemokine receptor CXCR4 prevents its use as an HIV-1 co-receptor. J. Ex. Med. 186:1395-1400;
M	Doranz, B.J., Z-H. Lu, J. Rucker, T.-Y Zhang, M. Sharron, Y.-H Cen, Z.-X. Wang, H.-H Guo, J.-G Du, M.A. Accavitti, R.W. Doms and S.C. Peiper. 1997. Two distinct CCR5 domains can mediate co-receptor usage by human immunodeficiency virus type 1. J. Virol. 71:6305-6314;
N	Dragic, T., V. Litwin, G.P. Allaway, S.R. Martin, Y. Huanh, K.A. Nagashima, C. Cayanan, P.J. Maddon, R.A. Koup, J.P. Moore and W.A. Moore and W.A. Paxton. 1996. HIV-1 entry into CD4+ cells is mediated by the chemokine receptor CC-CKR-5. Nature 381:667-673;
O	Hill, C.M., D. Kwon, M. Jones, C.B. Davis, S. Marmon, B.L. Daugherty, J.A. DeMartino, M.S. Springer, D. Unutmaz and D.R. Littman. 1998. The amino terminus of human CCR5 is required for its function as a receptor for diverse human and simian immunodeficiency virus envelope glycoproteins. Virology 248:257-371;

EXAMINER

DATE CONSIDERED

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## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

SP	P	Kwong, P.D., R. Wyatt, J. Robinson, R.W. Sweet, J. Sodroski and W.A. Hendrickson. 1998. Structure of an HIV gp120 envelope glycoprotein in complex with the CD4 receptor and a neutralizing human antibody. Nature 393:648-659;
	Q	Laal, S., S. Burda, M.K. Gorny, S. Karwowska, A. Buchbinder and S. Zolla-Pazner. 1994. Synergistic neutralization of human immunodeficiency virus type 1 by combinations of human monoclonal antibodies. J. Virol. 68:4001-4008;
	R	Li, A., H. Katinger, M.R. Posner, L. Cavacini, S. Zolla-Pazner, M.K. Gorny, J. Sodroski, T.C. Chou, T.W. Baba and R.M. Ruprecht. 1998. Synergistic neutralization of simian-human immunodeficiency virus SHIV-vpu+ by triple and quadruple combinations of human monoclonal antibodies and high-titer antihuman immunodeficiency virus type 1 immunoglobulins. J. Virol. 72:3235-3240;
	S	Mack, M., B. Luckow, P.J. Nelson, J. Cihak, G. Simmons, P.R. Clapham, N. Signoret, M. Marsh, M. Stangassinger, F. Borlat, T.N.C. Wells, D. Schlondorff and A.E.I. Proudfoot. 1998. Aminooxypentane-RANTES induces CCR5 internalization but inhibits recycling: a novel inhibitory mechanisms of HIV infectivity. J. Ex. Med. 187:1215-1224;
	T	McKnight, A., D. Wilkinson, G. Simmons, S. Talbot, L. Picard, M. Ahuja, M. Marsh, J.A. Hoxie and P.R. Clapham. 1997. Inhibition of human immunodeficiency virus fusion by a monoclonal antibody to a co-receptor (CXCR3) is both cell type and virus strain dependent. J. Virol. 71:1692-1696;
	U	Strizki, J.M., J Davis-Turner, R.G. Collman, J. Hoxie and F. Gonzalez-Scarano. 1997. A monoclonal antibody (12G5) directed against CXCR4 inhibits infection with the dual-tropic human immunodeficiency virus type 1 isolate HIV-1 89.6 but not the T-tropic isolate HIV-1 HxB J. Virol. 71:5678-5683;
SP	V	Trkola, A., T. Dragic, J. Arthos, J. Binley, W.C. Olson, G.P. Allaway, C. Cheng-Mayer, J. Robinson, P.J. Maddon and J.P. Moore. 1996. CD4-dependent, antibody sensitive interactions between HIV-1 and its co-receptor CCR-5. Nature 384:184-187;

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W	Vijh-Warrier, S., A. Pinter, W.J. Honnen and S.A. Tilley. 1996. Synergistic neutralization of human immunodeficiency virus type 1 by a chimpanzee monoclonal antibody against the V2 domain of gp120 in combination with monoclonal antibodies against the V3 loop and the CD4-binding site. J. Virol. 70:4466-4473;
X	Wu, L., G. LaRosa, N. Kassam, C.J. Gordon, H. Heath, N. Ruffing, H. Chen, J. Humblis, M. Samson, M. Parmentier, J.P. Moore and C.R. Mackay. 1997. Interaction of chemokine receptor CCR5 with its ligands: multiple domains for HIV-1 gp120 binding and a single domain for chemokine binding. J. Exp. Med. 186:1373-1381;
Y	Ylisastigui, L., J.J. Vizzanova, E. Drakopoulou, P. Paindavoine, C.F. Calvo, M. Parmentier, J.C. Gluckman, C. Vita and A. Benjoud. 1998. Synthetic full length and truncated RANTES inhibit HIV-1 infection of primary macrophages. AIDS 12:977-984.
Z	Tilley, S. A., W.J. Honnen, S. Warrier, M.E. Racho, T.C. Chou, M. Girard, E. Muchmore, M. Hilgartner, D.D. Ho, M.S.C. Fung, and A. Pinter. 1991. Potent Neutralization of HIV-1 by Human and Chimpanzee Monoclonal Antibodies Directed Against Three Distinct Epitope Clusters of gp120. Sixieme Colloque Des Cent Gardes. 211-216;
AA	Tilley, S.A., W.J. Honnen, M.E. Racho, T.C. Chou, and A. Pinter. 1992. Synergistic Neutralization of HIV-1 by Human Monoclonal Antibodies Against the V3 Loop and the CD4-Binding Site of gp120. AIDS Research and Human Retroviruses 80:4: 461-467;
AB	Choe, H., M. Farzan, Y. Sun, N. Sullivan, B. Rollins, P.D. Ponath, L. Wu, C.R. Mackay, G. LaRosa, W. Newman, N. Gerard, C. Gerard, and J. Sodroski. The Beta-Chemokine Receptors CCR3 and CCR5 Facilitate Infection by Primary HIV-1 Isolates. Cell 85: 1135-1148;

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SP	AC	Doranz, B.J., J. Rucker, Y. Yi, R. Smyth, M. Samson, S.C. Peiper, M. Parmentier, R.G. Collman, and R.W. Doms. A Dual-Tropic Primary HIV-1 Isolate That Uses Fusin and Beta-Chemokine Receptors CKR-5, CKR-3, and CKR-2b as Fusion Cofactors. Cell 85: 1149-1158;
	AD	Deng, H., R. Liu, W. Ellmeier, S. Choe, D. Unutmaz, M. Burkhardt, P.D. Marzio, S. Marmon, R.E. Sutton, C.M. Hill, C.B. Davis, S.C. Peiper, T.J. Schall, D.R. Littman, and N.R. Landau, Identification of a Major Co-Receptor for Primary Isolates of HIV-1. Nature 381: 661-666;
SP	AE	Feng, Y., C.C. Broder, P.E. Kennedy, E.A. Berger. HIV-1 Entry Cofactor: Functional cDNA Cloning of a Seven-Transmembrane, G Protein-Coupled Receptor. Science 272: 872-877;

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Exhibit A